## Claims: -

A syringe comprising:

- a) a barrel having a liquid drug reservoir therein;
- b) a delivery needle mounted on the first end of the barrel;
- c) a gas generator located at the second end of the barrel, the gas generator in communication with the reservoir when the gas generator is activated, so as to drive a liquid from the reservoir through the needle;
- d) gas generation activation means; and

e) a sleeve resiliently mounted on the first end of the barrel between a first position where the tip of the needle is concealed by the sleeve to a second position where the tip of the needle is revealed,

f) whereby when the sleeve is placed against an injection site and the barrel is moved toward the injection site, the sleeve is caused to move from the first position to the second position, and the needle is caused to penetrate the injection site, such that activation of the gas generator drives a liquid from the reservoir into the injection site through the needle.

- The syringe of Claim wherein the gas generator comprises 2. first and second chambers separated by a deformable membrane. 20
  - 3. The syringe of Claim 2 wherein the gas activation means comprises means for puncturing the deformable membrane.
  - The syringe of Claim 1 wherein the gas activation means is activated by movement of the barrel and sleeve from the first position to the second position.
  - 5. towards the first position so that it moves to the first position when no pressure is applied to the barrel.

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- The syringe of Claim 5 wherein the sleeve is axially biased by 6. means of a coil spring.
- The syringe of Claim 6 wherein the coil spring is disposed 7. between the sleeve and the barrel.
- The syringe of Claim 5 wherein the sleeve is torsionally 5 8. biased.
  - The syringe of Claim 8 wherein the axial and torsional bias are 9. provided by a compression-extension spring under torsional strain.
  - 10. The syringe of Claim 1 further comprising locking means such that when the sleeve returns from the second position to the first position the locking means prevents the sleeve from returning to the second position.
  - The syringe of Claim 10 wherein the locking means comprises 11. a pair of co-operating formations disposed on the sleeve and the barrel respectively.
  - The syringe of Claim 11 wherein the pair of co-operating 12. formations comprises a slot and a member received in the slot respectively.
  - The syringe of Claim 2 wherein the first and second chambers 13. house the components of an effervescent couple respectively.
- The syringe of Claim 13 wherein at least one of the 20 14. components of the couple is a liquid.
  - The syringe of Claim 13 wherein the components of the 15. effervescent couple are citric acid and sodium bicarbonate respectively.
  - 16. The syringe of Claim 1 wherein the needle extends between about 1-3 mm beyond the first end of the barrel.

- 17. The syringe of Claim 1 wherein the needle extends approximately 1 mm beyond the first end of the barrel.
- 18. The syringe of Claim 1 wherein the gas generator generates a pressure of about 2 atmosphere.
- 5 19. A method of injecting liquid drug comprising the following steps:
  - a) providing a barrel having a liquid drug reservoir therein, a delivery needle mounted on the first end of the barrel,
  - b) locating a gas generator at the second end of the barrel, the gas generator in communication with the reservoir when the gas generator is activated, so as to drive a liquid from the reservoir through the needle;
  - c) resiliently mounting a sleeve within the first end of barrel, the sleeve capable of assuming a first position where the tip of the needle is concealed by the sleeve and a second position where the tip of the needle is revealed;
  - d) activating the gas generator;
  - e) placing the sleeve against an injection site; and
  - f) moving the barrel toward the injection site, thereby causing the sleeve to move from the first position to the second position, the needle to penetrate the injection site, and the gas generator to drive a liquid from the reservoir into the injection through the needle.
- 20. The method of Claim 19 further comprising the step of causing the sleeve to return to the first position after moving to the second position.
  - 21. The method of Claim 20 further comprising the step of preventing the sleeve from returning to the second position after returning to the first position.

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- 22. The method of Claim 19 wherein the gas generator comprises a first chamber and a second chamber separated by a deformable membrane.
- 23. The method of Claim 22 wherein the first and second chambers house the components of an effervescent couple respectively.
  - 24. The method of Claim 23 wherein at least one of the components of the couple is a liquid.
  - 25. The method of Claim 23 wherein the components of the effervescent couple are citric acid and sodium bicarbonate respectively.
  - 26. The method of Claim 22 the gas generator is activated by piercing the membrane.
  - 27. The method of Claim 19 wherein the needle penetrates the injection site about 1-3 mm.
  - 28. The method of Claim 19 wherein the pressure within the gas generator is about 2 atmosphere.